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ANNULAR ECLIPSE of Oct. 9, 1847.

The Astronomer Royal stated the substance of two letters respecting the solar eclipse of October 9, 1847; one, from M. Mauvais addressed to himself, and the other from M. Schaub, communicated by M. Le Verrier to Mr. Hind.

The *Bureau des Longitudes* assigned to MM. Mauvais and Goujon the station of Orleans, near the southern limit of the places where the eclipse was annular. Their attention was especially directed to those phenomena which are described by Mr. Baily in the tenth volume of the *Memoirs*.

The position of Orleans was particularly favourable for observing the appearances which present themselves at contact. "When the cusps of the sun were about a quarter of the moon's diameter apart, the advance of these points towards each other was very sensible, being almost as rapid as the movement of a star in the field of a transit instrument, but it was not uniform. The cusps appeared to wriggle forwards, sometimes faster, sometimes slower, with a *vermicular* motion."

" I saw distinctly," M. Mauvais says, " a luminous trace in advance of the cusp and in its prolongation, but at a distance of about 10″ the dark interval gradually diminished in extent at its extremities, and the detached luminous points grew larger and finally fused in one. Just before the definitive formation of the annulus, a series of points and luminous traces, more or less extended in the direction of the moon's limb (but all very thin in the perpendicular direction), were seen throughout the space between the cusps; all these grew gradually larger at the extremities, and finally united. The ring, when formed, was very thin, not exceeding a few seconds. I insist particularly on this point, that the dark intervals gradually decreased, not merely in a direction parallel to the moon's limb, but also in depth or perpendicular to the limb. They did not extend themselves into dark filaments, as described by Mr. Baily, in his *Memoir*, and as represented in his drawing."

"The appearances agree with Mr. Henderson's description (p. 39). There was nothing seen at Orleans which required for its explanation a phenomenon of *diffraction* or of *irradiation:* every thing seems accounted for by the irregularity of the moon's edge, the tops of the mountains having reached the limb of the sun, while a few rays escaped through the valleys."

M. Schaub observed at Cilly, in Styria. Latitude, 46° 13′ 20″ N. and 12° 55′ 25″ East of Paris. " With a magnifying power of 40 and a red shade, the formation of the ring took place without any irregularity. At this time the sun was a little clouded, but shortly after he became perfectly clear; and a power of 60 was applied, with a dark glass, which, combining complementary colours, gives white images. The lunar mountains were distinctly seen upon the sun. The limb of the moon undulated, but continued circular up to the time of the second contact. This contact did not take place in a continuous line; the tops of several mountains touched

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the sun's limb at once, so that the cusps were connected by a series of luminous points separated from each other, but perfectly referable to the forms of the mountain previously seen."

"Of all the phenomena described by Mr. Baily (*Mem. R. A. S.* vol. x.), I only saw those represented in fig. 1; but to make this agree with my observation, the serrated portion should be diminished one-half.

"The duration of the annulus was $7^m\ 0^s{\cdot}4$, which should, perhaps, be increased 2^s or 3^s, on account of the clouds at the first contact. The second contact was estimated to take place at the disappearance of the luminous points. If the second contact be estimated from the formation of these points, then the duration must be shortened about 1^s."

SOLAR SPOTS.

Extract of a letter from Mr. J. H. Griesbach, to the President.

"I have great pleasure in sending you copies of a series of my drawings of the solar spots, from September 20th, to October 25th, 1843, complete, with the exception of one day; and I shall be happy to copy all the others, if you will let me know how you like them to be done. The telescope I use is a 6-foot Newtonian, the speculum 6 inches diameter. The position of the spots I often determine by receiving the image on a drawing-board: some of the drawings were made only from the view, but I have been careful to represent the changes in the form and nature of the spots, thinking that an extended series of drawings may in the end afford some indication of the nature of their cause. On the 27th of September, 1843, I made hourly drawings of the sun, and between four and five o'clock, three fresh spots broke out, two near the centre of the disc; they were not visible the following day. The changes in the form of the large spot which came into view on the 14th of October, 1843, are particularly interesting."

Mr. Griesbach's drawings were presented to the Society, with a drawing made on September 27, 1843, of *Jupiter, seen without his moons.* This rare phenomenon was also observed at Woodstock, Vermont, U. S.

Extract of a letter from the President, enclosing Mr. Griesbach's Communication.

"Herewith I enclose a letter from Mr. H. Griesbach, explanatory of the drawings of the solar spots, which I lately addressed to you, executed by him, and which, at my request, he has been good enough to copy for communication to the Astronomical Society, as a contribution to the history of the solar spots, and as the *commencement of a collection of such drawings*, which it appears to me highly desirable should be formed, with a view to securing, if possible, an unbroken series of such drawings, exhibiting a continuous view of the changes in the sun's surface for every day in every

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